Amendments to the Claims

Please cancel Claims 6, 7, 13, 28, 29, 32, 43, 44, 50, and 58-62. Please amend Claims 1, 8, 10, 11, 12, 23, 30, 37, 38, and 46. Please add new Claims 63-66. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A system for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

a transducer providing an electrical signal as a function of sensed force or mechanical motion; and

at least two filters coupled to the output of the transducer and outputting filtered electrical signals over respective multiple frequencies, at least one of the at least two filters coupled to the transducer at the output of the transducer directly through a passive circuit ~~means~~; and

at least one of said at least two filters including a buffer that isolates the inputs of said at least two filters from one another.

2. (Previously Presented) The system as claimed in Claim 1, wherein at least one of said at least two filters includes a low-pass filter and another of said at least two filters includes a high-pass filter.

3. (Previously Presented) The system as claimed in Claim 2, wherein the low-pass filter passes frequencies in a linear region of the transducer and the high-pass filter passes a resonance frequency of the transducer.

4. (Previously Presented) The system as claimed in Claim 1, wherein the filters in said at least two filters filter and amplify the electrical signal.

5. (Previously Presented) The system as claimed in Claim 1, wherein said at least two filters filter, amplify and offset the electrical signal.

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) The system as claimed in Claim [[7]] 1, wherein the buffer is electrically disposed in at least one of said at least two filters.

9. (Previously Presented) The system as claimed in Claim 8, further including at least one high impedance element external from the buffer to provide the output electrical characteristics of the transducer in at least one of the at least two filters.

10. (Currently Amended) The system as claimed in Claim [[7]] 1, wherein the buffer is arranged in a source follower configuration.

11. (Currently Amended) The system as claimed in Claim [[7]] 1, wherein the buffer employs an operational amplifier.

12. (Currently Amended) The system as claimed in Claim [[7]] 1, wherein one of the at least two filters includes a low-pass filter and power is supplied to the buffer by the output of the low-pass filter.

13. (Cancelled)

14. (Withdrawn) The system as claimed in Claim 1, wherein the filters use a JFET transistor to amplify the electrical signal.

15. (Withdrawn) The system as claimed in Claim 1, wherein the filters use at least one JFET transistor to decrease temperature dependence of characteristics of the filters.

16. (Withdrawn) The system as claimed in Claim 1, wherein the filters have low output impedance.

17. (Withdrawn) The system as claimed in Claim 1, wherein the filters use at least one transistor to provide low output impedance.

18. (Withdrawn) The system as claimed in Claim 1, wherein the filters use a Darlington combination of transistors to provide low output impedance.

19. (Withdrawn) The system as claimed in Claim 1, wherein the filters use a Darlington transistor to provide low output impedance.

20. (Previously Presented) The system as claimed in Claim 1, wherein at least one of the at least two filters includes a passive low-pass filter circuit.

21. (Previously Presented) The system as claimed in Claim 1, wherein at least one of the filters includes a passive high-pass filter circuit.

22. (Previously Presented) The system as claimed in Claim 1, wherein the transducer is a piezoelectric transducer.

23. (Currently Amended) A method for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

providing a transducer generating an electrical signal as a function of sensed force or mechanical motion;

at the output of the transducer, channelizing the electrical signal into at least a first filter and a second filter, the channelizing including channelizing the electrical signal at the output of the transducer directly through a passive circuit ~~means~~ to at least one of the first filter or the second filter;

buffering the electrical signal in a manner allowing for independent filtering by the first and second filters;

by the first and second filters, filtering the electrical signal into respective frequency bands; and

outputting the filtered electrical signals over respective multiple frequencies.

24. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes low-pass filtering the electrical signal.

25. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes high-pass filtering the electrical signal.

26. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes filtering and amplifying the electrical signal.

27. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes filtering, amplifying, and offsetting the electrical signal.

28. (Cancelled)

29. (Cancelled)

30. (Currently Amended) The method as claimed in Claim ~~29~~ 23, further including passing the electrical signal through an electrical element ~~approximating~~ having characteristics similar to the output impedance of the transducer prior to filtering the electrical signal into at least one of the frequency bands.

31. (Original) The method as claimed in Claim ~~29~~ 23, further including employing a single power source to provide power for the buffering.

32. (Cancelled)

33. (Withdrawn) The method as claimed in Claim 23, wherein said filtering the electrical signal includes decreasing temperature sensitivity.

34. (Withdrawn) The method as claimed in Claim 23, wherein said outputting the electrical signal includes providing the electrical signal in said at least first and second frequency bands with a low output impedance.

35. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes passive low-pass filtering.

36. (Original) The method as claimed in Claim 23, wherein said filtering the electrical signal includes passive high-pass filtering.

37. (Currently Amended) A system for converting sensed force or mechanical motion into electrical signals, comprising:

means for providing an electrical signal as a function of sensed force or mechanical motion; and

at the output of said means for providing the electrical signal, means for channelizing said electrical signal into at least two channels; and

in the at least two channels, means for filtering the electrical signal and outputting the filtered electrical signal over respective multiple frequencies, at least one of the means for filtering the electrical signal coupled to the transducer at the output of the transducer directly through a passive circuit ~~means~~; and

at least one of the means for filtering the electrical signal including means for buffering the electrical signal to isolate the at least two channels from one another.

38. (Currently Amended) An electronic circuit for processing an electrical signal corresponding to a sensed force or mechanical motion, comprising:

at least two filter modules adapted to be coupled to a transducer providing an electrical signal, at least one of the said at least two filter modules coupled to the transducer at the output of the transducer directly through a passive circuit ~~means~~, said at least two filter modules adapted to filter the electrical signal into respective frequency bands and to provide respective filtered electrical signals over respective multiple frequencies on respective circuit outputs; and

a buffer that isolates respective inputs of said at least two filter modules from one another.

39. (Original) The electronic circuit as claimed in Claim 38, wherein said at least two filter modules include a low-pass filter.

40. (Original) The electronic circuit as claimed in Claim 38, wherein said at least two filter modules include a high-pass filter.

41. (Original) The electronic circuit as claimed in Claim 38, wherein said at least two filter modules filter and amplify the electrical signal.

42. (Original) The electronic circuit as claimed in Claim 38, wherein said at least two filter modules filter, amplify, and offset the electrical signal.

43. (Cancelled)

44. (Cancelled)

45. (Previously Presented) The electronic circuit as claimed in Claim ~~44~~ 38, wherein said buffer is electrically disposed in at least one of said at least two filter modules.

46. (Currently Amended) The electronic circuit as claimed in Claim 45, further comprising at least one impedance element external from the buffer that provides the electrical characteristics similar to those provided by the transducer ~~observed by said circuit input to filter modules including said buffer~~.

47. (Original) The electronic circuit as claimed in Claim ~~44~~ 38, wherein said buffer is arranged in a source follower configuration.

48. (Original) The electronic circuit as claimed in Claim ~~44~~ 38, wherein said buffer employs an operational amplifier.

49. (Original) The electronic circuit as claimed in Claim ~~44~~ 38, wherein one of said at least two filter modules is a low-pass filter and power is supplied to said buffer by an output of said low-pass filter.

50. (Cancelled)

51. (Withdrawn) The electronic circuit as claimed in Claim 38, wherein at least one of said at least two filter modules uses a JFET transistor to amplify the electrical signal.

52. (Withdrawn) The electronic circuit as claimed in Claim 38, wherein at least one of said at least two filter modules uses at least one JFET transistor to decrease temperature sensitivity of characteristics of the filter module.

53. (Withdrawn) The electronic circuit as claimed in Claim 38, wherein at least one of said at least two filter modules has low output impedance.

54. (Withdrawn) The electronic circuit as claimed in Claim 53, wherein at least one of said at least two filter modules uses at least one transistor to provide the low output impedance.

55. (Withdrawn) The electronic circuit as claimed in Claim 53, wherein at least one of said at least two filter modules uses a Darlington combination of transistors to provide the low output impedance.

56. (Original) The electronic circuit as claimed in Claim 38, wherein at least one of said at least two filter modules includes a passive low-pass filter circuit.

57. (Previously Presented) The electrical circuit as claimed in Claim 38, wherein at least one of said at least two filter modules includes a passive high-pass filter circuit.

58. (Cancelled)

59. (Cancelled)

60. (Cancelled)

61. (Cancelled)

62. (Cancelled)

63. (New) A system for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

a transducer providing an electrical signal as a function of sensed force or mechanical motion; and

at least two filters coupled to the output of the transducer and outputting filtered electrical signals over respective multiple frequencies, at least one of the at least two filters coupled to the transducer at the output of the transducer directly through a passive circuit, at least one of said at least two filters including a low-pass filter that passes frequencies in a linear region of the transducer, and another of said at least two filters includes a high-pass filter that passes a resonance frequency of the transducer.

64. (New) A method for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

providing a transducer generating an electrical signal as a function of sensed force or mechanical motion;

at the output of the transducer, channelizing the electrical signal into at least a first filter and a second filter, the channelizing including channelizing the electrical signal at the output of the transducer directly through a passive circuit to at least one of the first filter or the second filter;

by the first and second filters, filtering the electrical signal into respective frequency bands including a linear region of the transducer and a resonance frequency of the transducer; and

outputting the filtered electrical signals over respective multiple frequencies.

65. (New) A system for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

a transducer providing an electrical signal as a function of sensed force or mechanical motion; and

at least two filters that filter, amplify, and offset the electrical signal, the at least two filters coupled to the output of the transducer and outputting filtered electrical signals over respective multiple frequencies, at least one of the at least two filters coupled to the transducer at the output of the transducer directly through a passive circuit.

66. (New) A method for converting sensed force or mechanical motion into corresponding electrical signals, comprising:

providing a transducer generating an electrical signal as a function of sensed force or mechanical motion;

at the output of the transducer, channelizing the electrical signal into at least a first filter and a second filter, the channelizing including channelizing the electrical signal at the output of the transducer directly through a passive circuit to at least one of the first filter or the second filter;

by the first and second filters, filtering, amplifying, and offsetting the electrical signal into respective frequency bands; and

outputting the filtered electrical signals over respective multiple frequencies.